GENERAL ELECTRIC COMPANY

NUCLEONICS DIVISION

HANFORD WORKS . . . . . RICHLAND, WASHINGTON

October 6, 1953

Dr. Joshua Lederberg
University of Wisconsin
Department of Agriculture
Madison, Wisconsin

Dear Dr. Lederberg:

With the information and cultures which you previously sent, we have started work trying to study the mutagenic effects of P^{32}. We have, however, experienced serious difficulty and I am wondering if you would be so good as to listen to our woes and give advice.

Using W-1485, carried on minimal slants, we inoculate from this into growth tubes in which the organisms are exposed to and/or metabolize the P^{32}. In these tubes there is a very low level of phosphorus so that growth is limited by a deficiency of this one element. Immediately following growth, aliquots are plated onto complete medium for isolation or in some cases held in a frozen state and then plated. Individual colonies are then picked onto minimal and complete plates to identify the biochemical mutants. To date, using these procedures, we have found no mutants and are beginning to doubt that our techniques are correct.

We do find some production of long forms which, due to their multinuclear condition, could prevent identification of mutants. It seems unlikely that this could prevent the isolation of all mutants since many cells microscopically appear normal.

If you can suggest any places where our procedure is faulty or changes which should give better results I would greatly appreciate it. As a check on our isolation and identification procedure, I'd like to obtain one of your mutant strains of E. coli if it is available.

If we ultimately are successful in our attempts at mutation induction there should be mutants for which no further use would be planned here and I will be most happy to send them on to you.

Best wishes to Esther.

Sincerely yours,

Frank Hungate
BIOLOGY SECTION

FP Hungate:dhw